



DANUBE DELTA BIOSPHERE RESERVE

**TULCEA
ROMANIA**



Danube Delta Biosphere Reserve Authority

- **General presentation of DDBR**
- **Legislation framework**
- **DDBRA organigram**
- **Management Plan for DDBR**
- **International cooperation of DDBRA**

Bucharest, 1st June 2004

- **Surface:** 580,000 hectares (2.5 % of Romania's surface)
- **Year of establishment:** 1990
- The only delta in the world declared a biosphere reserve
- One of the worldwide largest wetland, especially a waterfowl habitat
- The greatest reedbed expanses worldwide
- **Environmental Authority:** **Danube Delta Biosphere Reserve Authority** , a public institution subordinated to the Ministry of Environment and Waters Management



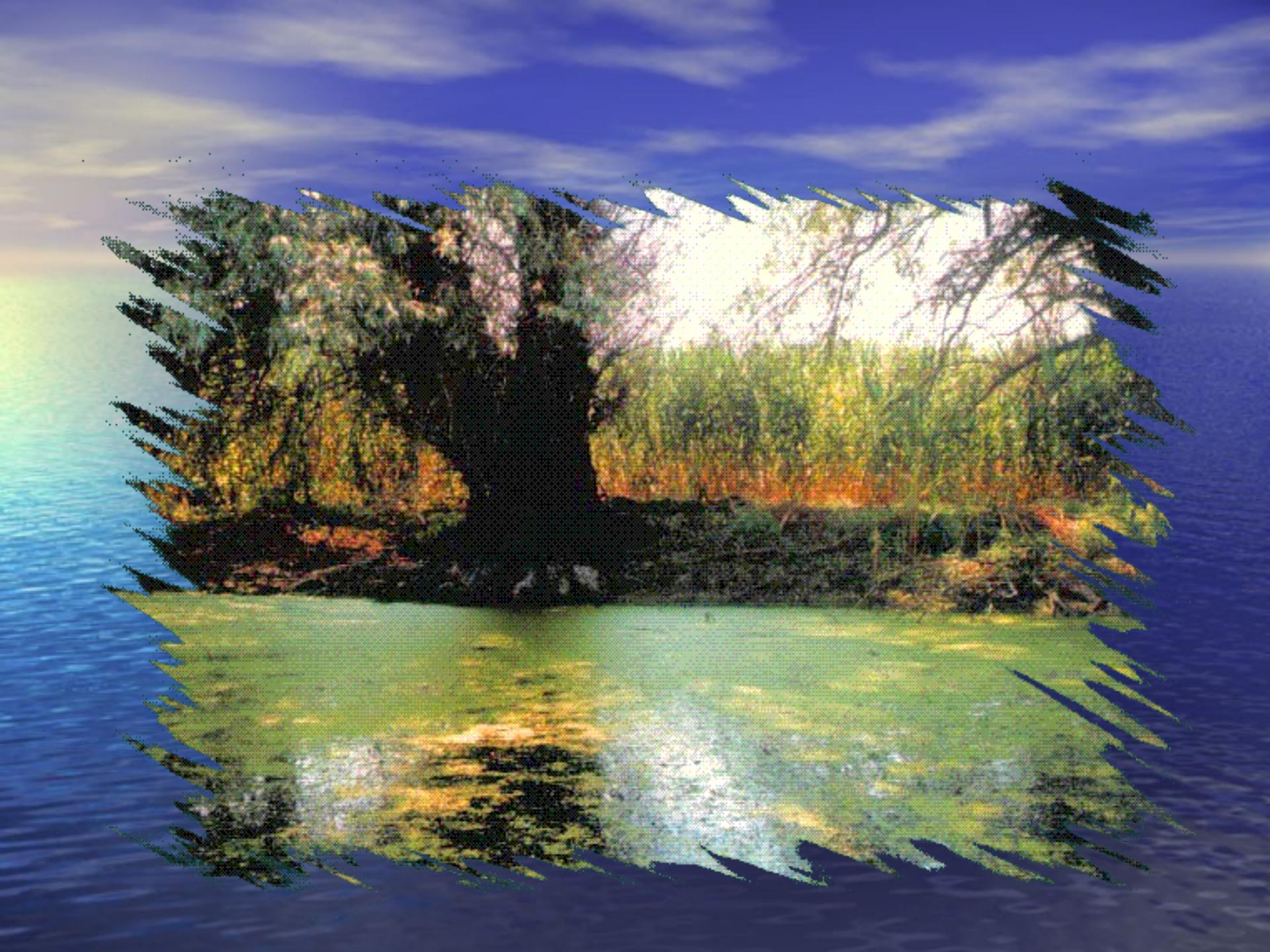


Water lily



Flooding area

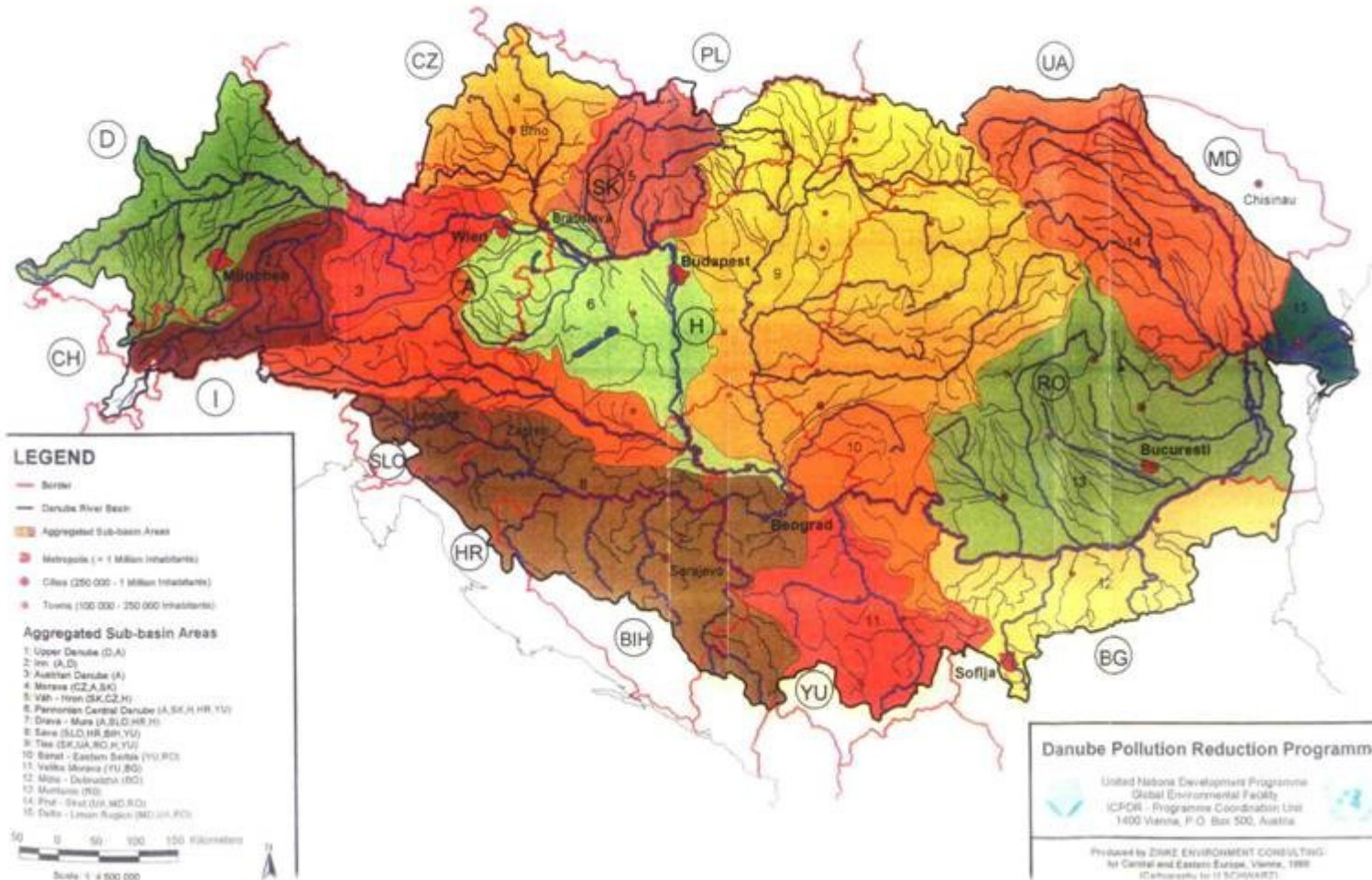




DANUBE RIVER BASIN

Map 2: Aggregated Sub-basin Areas

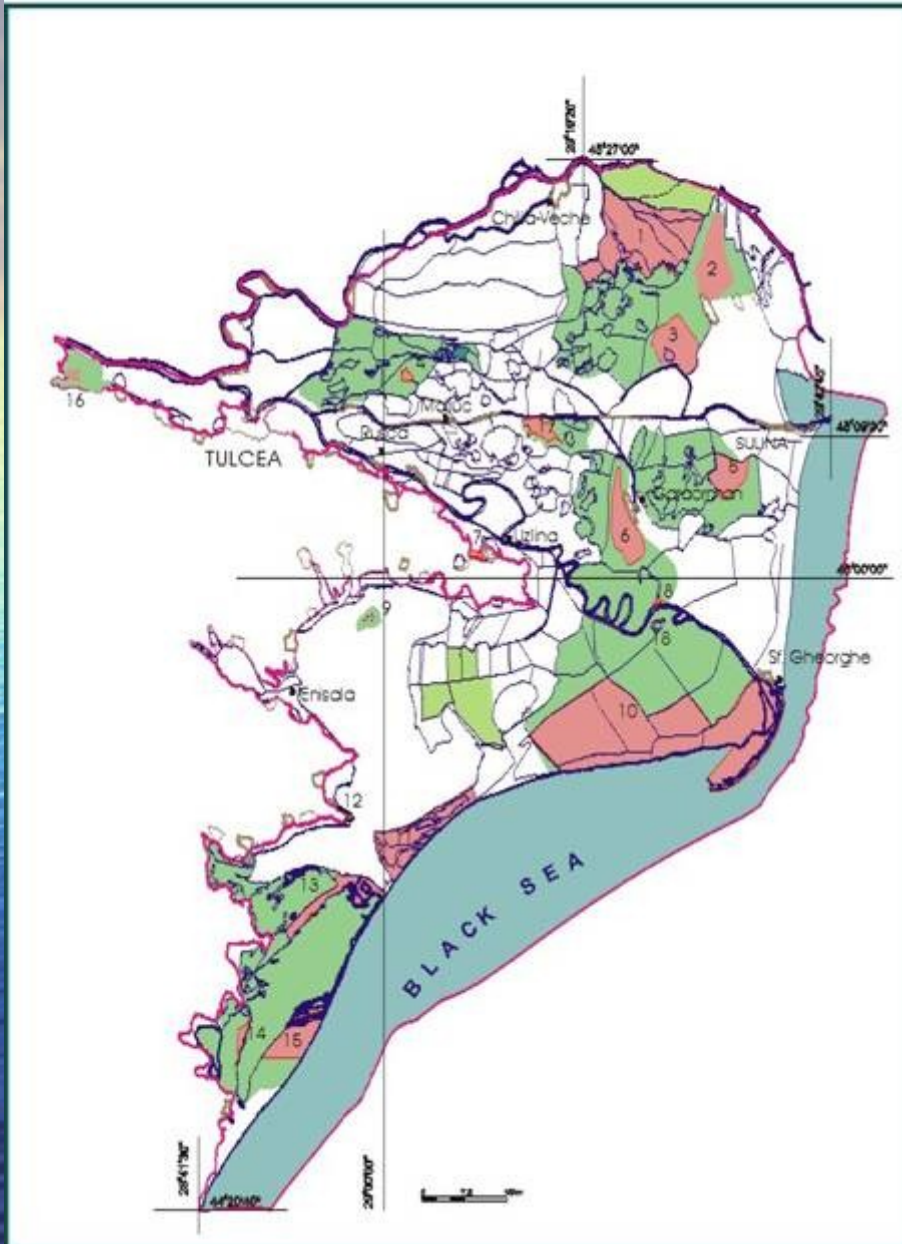
Based on Transboundary Analysis Workshop 1999



SATELITE IMAGE 1999



THE DANUBE DELTA BIOSPHERE RESERVE



Total surface: 580,000 ha

**Strictly protected areas:
50,600 ha**

Buffer zones: 223,300 ha

Economic zones: 306,100 ha

- ecological restoration:
11,425 ha**
- agriculture polders: 39,974
ha**
- fish ponds: 39,567 ha**
- artificial forests: 6,442 ha**

DDBR's zones with respect to management for nature conservation and sustainable development:

- **Strictly protected areas** (18 sites and cover a total of 50,600 hectares)- include relatively unspoilt places with excellent examples of terrestrial and wetland ecosystems and generally support the most sensitive species found in the DDBR.
- **Buffer zones** (13 zones and cover a total of 223,300 hectares)- include areas with biological characteristic, likely the previous ones, mitigate the impact of the human activities on the strictly protected areas.
- **Economic zones** (cover a total of 306,100 hectares)- include areas where traditional allowed activities are undertaken, in the limits of the support capacity.
- **Area for ecological restoration** - where Danube Delta Biosphere Reserve Authority carries on activities for ecological restoration.

HYPSOMETRY

- Low flat plain: +0.52 m above Mean Black Sea Level
- Highest point: +48 m (Popina Island)
- Letea Dunes highest point: +12.4 m
- Maximum depth of Danube branches:
 - Chilia: -39 m
 - Tulcea: - 34 m
 - Sf. Gheorghe: -26 m



HYDROLOGY

- Average annual water discharge (1921-1990): 6,570 m³/s at the delta entrance
- Actual quantity of water in the delta: 5 km³
- Highest value: 17,700 m³/s (1958)
- Chilia branch: 58%
- Sulina branch: 19.9%
- Sf. Gheorghe branch: 22%
- Amount of suspended sediments: 1.5 million tons/year (46 kg/s)

CLIMATE

- Continental-temperate climate
- Average number of hours sunshine: 2,400 hours year
- Absolute minimum air temperature: -27.2° (18.01.1963)
- Absolute maximum air temperature: $+39.7^{\circ}$ (02.08.1945)
- Air humidity: 80% (the highest in Romania)
- Annual atmospheric precipitation: 400 mm
- Potential evapotranspiration: 700 mm
- Winds blow 80% of the year

POPULATION

- Rural settlements: 27 (64.3% inhabitants)
- Urban settlements: 1 (Sulina) (35.7% inhabitants)
- Total population: 14,962 inhabitants (2002)
- Ethnical structure:
 - Romanians: 11,851 people (79%)
 - Lipovans: 1,670 people (11%)
 - Ukrainians: 1,345 people (9%)
 - Greeks: 71 people
 - Turks: 13 people
 - Hungarians: 11 people
 - Other nationalities: 34 people

POPULATION (continue)

- Employed people from active population in 1996: 86.6%
- Activities:
 - fishing and pisciculture: 32.5%
 - agriculture: 31%
 - industry, construction, transport: 22.5%
 - education, culture: 3.8%
 - trade, services: 2.1%
 - tourism: 2.1%
 - health system: 1.5%
 - administration: 1.5%



Human settlements



Human settlements



Traditional activities





Traditional activities





Traditional fishing

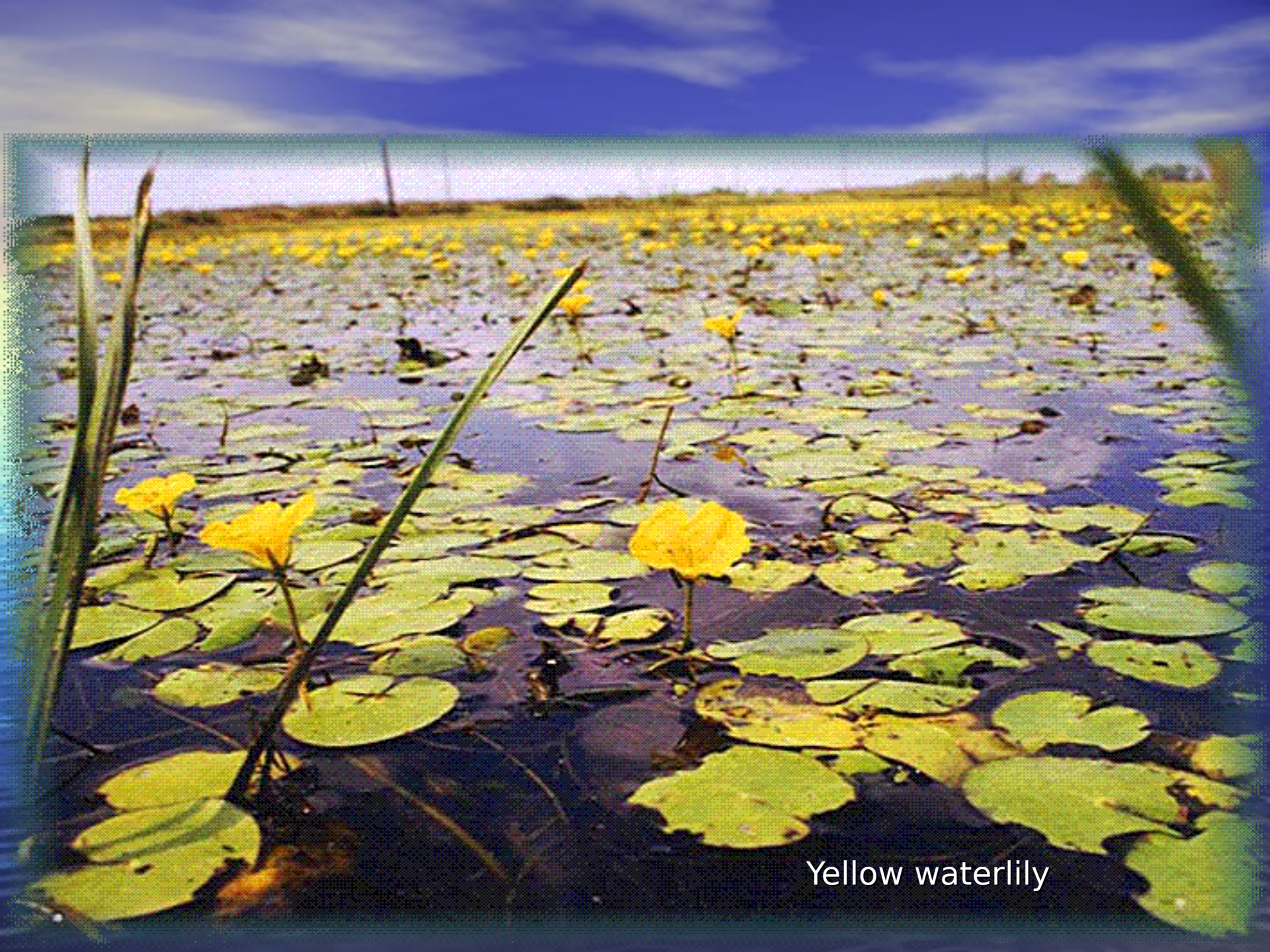


Sulina



BIODIVERSITY

- Total number of identified species: 5,137 species
- Flora species: 1,689 species
 - algae: 640 species
 - macromycete: 38 species
 - vascular plants: 902 species
- Fauna species: 3,460 species
 - invertebrates:
 - worms: 425 species
 - molluscs: 82 species
 - crustacean: 115 species
 - arachnids: 168 species
 - insects: 2,208 species



Yellow waterlily



LETEA forest



Water soldier



Yellow waterlily



Willow



Reed









BIODIVERSITY (continue)

- Vertebrates (454 species):
 - fish: 85 species
 - amphibians: 10 species
 - reptiles: 11 species
 - birds: 331 species
 - mammals: 42 species



Dice Snake





Iris



European pond terrapin



Liana



Lake frog



Green lizard



Common tree frog



Starry sturgeon



Orfe



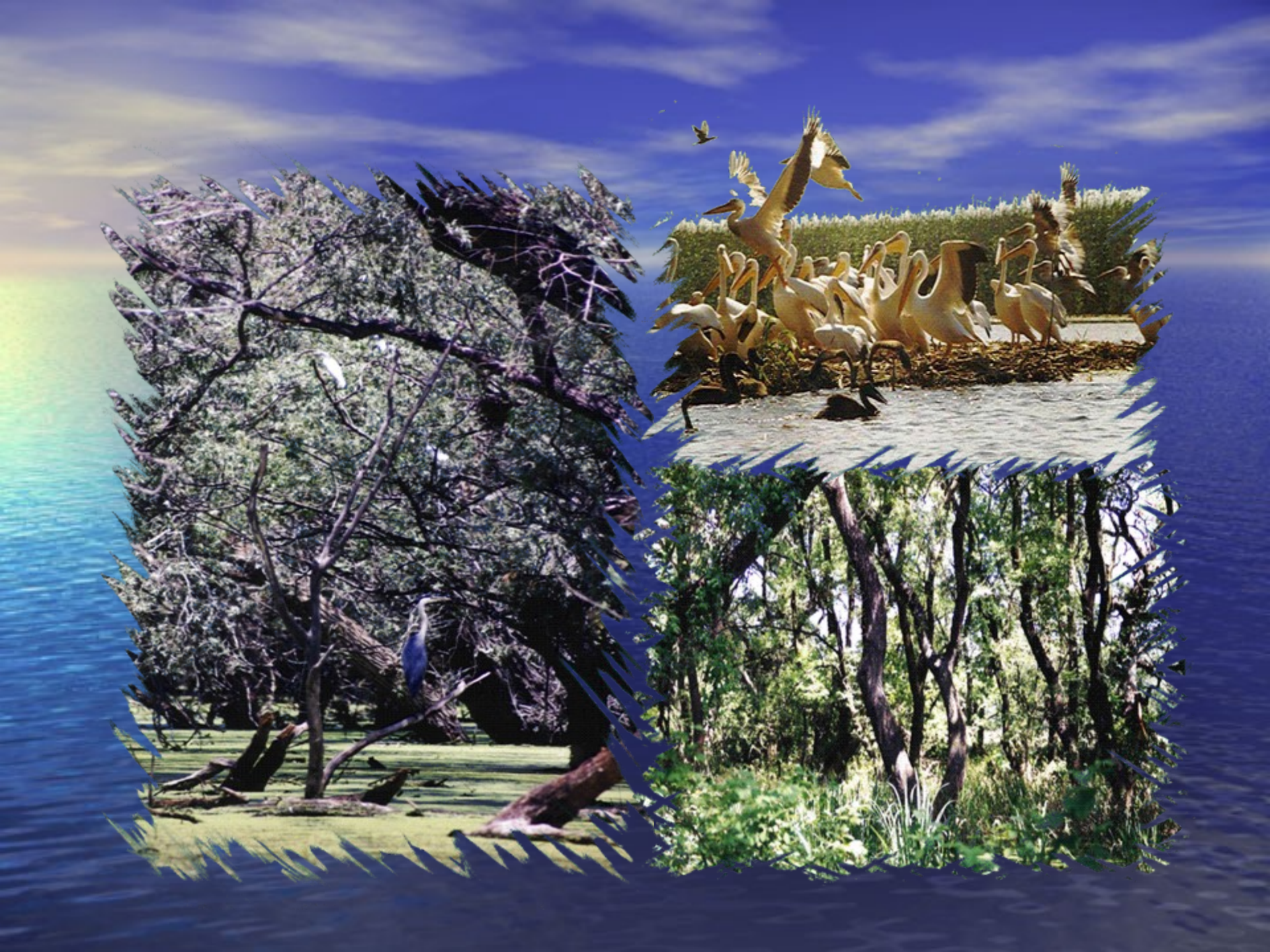
Sterlet

BIRDS

- Nesting birds: 172 species
- Migratory or partial migratory birds: 284 species
- Birds declared monuments of nature:
 - *Tadorna tadorna*
 - *Tadorna ferruginea*
 - *Corvus corax*
 - *Otis tarda*
 - *Pelecanus onocrotalus*
 - *Pelecanus crispus*
 - *Himantopus himantopus*
 - *Platalea leucorodia*
 - *Egretta alba*
 - *Egretta garzetta*

BIRDS (continue)

- Globally endangered species
 - *Phalacrocorax pygmaeus*
 - *Pelecanus crispus* (300 - 400)
 - *Anser erythropus* (5 - 10)
 - *Branta ruficollis* (50,000 - 55,000)
 - *Oxyura leucocephala* (300 - 400)
 - *Aythya nyroca* (400 - 600)
- Birds species under Bern Convention
 - strictly protected species: 229 species
 - protected species: 91





Cormorant- young



Herring gull- young



Spoonbill- young



Cormorant

White-tailed eagle

The image is a composite of two photographs. The left side shows a white Whooper swan swimming in a pond with reeds in the background. The right side shows a white Great white egret standing on a sandy shore. The two images are joined by a jagged, torn-paper-like border.

Whooper swan

Great white egret



White pelicans colony



Long-tailed tit



Great tit



Black-tailed godwit



Bee-eater



Glossy ibis

The main objectives of the DDBRA for the management of the Biosphere Reserve are:

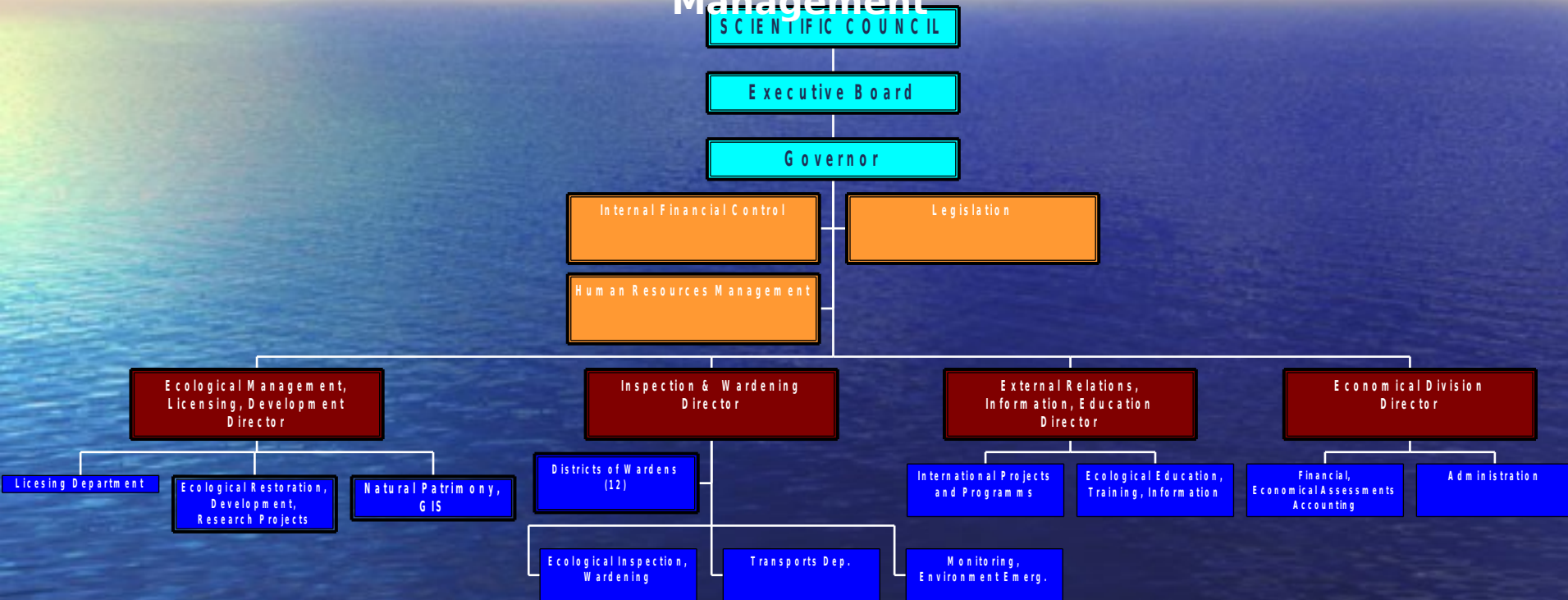
- Conservation and protection of the existing natural heritage.
- Restoration of affected areas
- Support for sustainable use of the natural resources.
- Provision of support, based on the results of research, for management, education, training and services.

LEGISLATION

- Law No. 82/1993 , modified by Law No. 454/2001- establishment of DDBR
 - DDBR limits
 - DDBRA objectives and attributions
 - reglementations in DDBR
- Governmental Decision No. 248/1994, modified by GD No. 367/2002
 - DDBR Statute
 - Management zones of DDBR
 - Scientific Council of DDBR

DDBRA Organigram

DDBRA is subordinated to the Ministry of Environment and Waters Management



Number of employers in DDBRA: 107 people

MANAGEMENT PLAN

- Management Policy
 - Develop and implement those measures in the DDBR which are required as a consequence of the international commitments assumed by Romania
 - Develop and maintain an integrated data base comprising information necessary for management of biodiversity conservation and use of resources within their carrying capacity
 - Protect and maintain populations of species and habitats with high ecological value
 - Identify recently extinct and endangered species within the DDBR and identify suitable habitats in order to restore their populations

MANAGEMENT PLAN (continue)

- Ensure the proper management of reedbeds in the DDBR
- Carry out research on the natural operations and functions of the delta ecosystems
- Manage the circulation of water in DDBR in order to improve the ecological conditions in lacustrine zones and adjacent areas
- Carry out ecological restoration works where the natural or semi-natural character of areas has been lost as a result of human activity
- Improve the monitoring of the quality of the environment in the DDBR and integrate it with the national monitoring system
- Take measures to ensure that discharges from Sulina channel meet the obligations of Bucharest Convention

MANAGEMENT PLAN (continue)

- Identify critical areas and sources of pollution which have an important impact on DDBR
- Formulate a regional action plan to deal with cases of accidental pollution
- Encourage economic activities, but only as far as these do not cause damage to the delta's ecosystem
- Improve quantity and quality of data available on tourism activity in the DDBR
- Facilitate tourism activity that is in harmony with the ecological objectives of the DDBRA, in particular to guide appropriate investments in the private sector
- Promote sustainable development of agriculture in DDBR

MANAGEMENT PLAN (continue)

- Develop an understanding of historical ecology in the DDBR
- Ensure that all physical activities in the DDBR are subject to environmental protection standards
- ***Raise official, scientific and public awareness of the DDBR at local, national and international levels***
- ***Cooperate with external organisations, especially internationally, to generate support for implementation of the DDBR objectives and management plan***
- Improve the capacity of the DDBRA to implement, monitor and revise the management plan
- Protect and conserve the morphology of the DDBR coastal zone

MANAGEMENT PLAN (continue)

- Institute a system of management for the sustainable utilisation of natural resources
- Develop and improve fish farming on the basis of economic efficiency
- Provide guidelines on forms of ecologically sustainable agriculture that would be compatible with the management objectives of the DDBRA
- Improve marketing of products from the delta
- Assess the effectiveness of existing buffer zones and, if necessary, recommend modifications to their management or limits
- Ensure the ecological integrity of strictly protected areas

PUBLIC AWARENESS STRATEGY

Target audience

- *Critical priority target audience (most important)*
 - local people
 - tourists
 - local authorities: (Tulcea County Council, government, politicians)
- *High priority*
 - children, students
 - DDBRA/ wardens
 - economical agents/ businessmen
 - mass-media
 - national, international donors

TARGET AUDIENCE (continue)

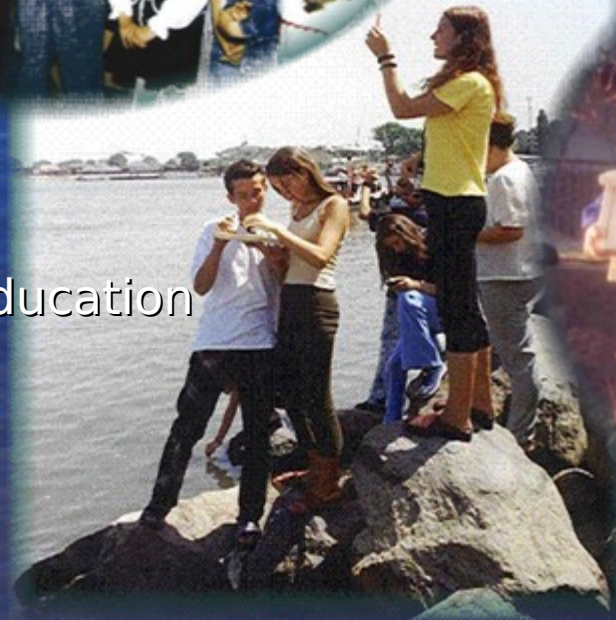
- *Moderate priority*
 - **government; politicians**
 - **specialists**
 - **NGOs**
 - **religious groups**
 - **Tulcea inhabitants**
 - **Aged people**
- *Low priority*
 - **international partners**

PUBLIC AWARENESS STRATEGY

Action Plan

- MAIN ISSUES:

- Pollution
- Understanding reasons for establishment of DDBR
- DDBRA public image
- Economic and social difficulties of the local people
- Internal communication within DDBRA
- Collaboration and participation between DDBRA and stakeholders
- Different administrative bodies involved in DDBR management
- Environmental education and awareness
- Legislation interpretation
- Exploitation of natural resources
- Unfulfilled tourism potential
- Maintaining culture and traditions



Environmental education

Environmental
education





Public awareness

The international recognition:

- The universal value of the reserve was recognized by the **Man and Biosphere (MAB) Programme of UNESCO** in 1990, through its inclusion in the international network of biosphere reserves
- The DDBR is listed as a wetland of international importance especially as waterfowl habitat under the **Ramsar Convention**
- Inclusion of the strictly protected areas in the World Heritage List under the **World Cultural and Natural Heritage Convention**.



INTERNATIONAL COOPERATION

● Bilateral Agreements:

- Parc Ornithologique du Marquenterre (France)
- Biesbosch National Park (The Netherlands)
- Parc Regional de Camargue (France)
- Po Delta (Italy)



**Agreement of
cooperation
on research
and
management
of wetlands
(1997)**



**EUROSITE Award 1995 for the restoration works
in Babina and Cernovca polders**



**European Diploma for protected area
awarded to the DDBR in June 2000 by the
Council of Europe**



EUROSITE Award 2001 for management

INTERNATIONAL PROJECTS

- Grant from European Bank for Reconstruction and Development (725,000 ECU): 1993 - 1995
 - Strengthening the institutional capacity of DDBRA
- Grant from the World Bank (4.5 million \$): 1995 - 2000
 - Biodiversity Conservation of the Danube Delta
- TACIS Project 2003
 - Management Plan for the Transboundary Protected Area (Republic of Moldova, Romania and Ukraine)

DANUBE DELTA BIOSPHERE RESERVE AUTHORITY

**34 A Portului street,
8800- Tulcea, Romania**

***Tel:* +40 240 518945**

***Fax:* +40 240 518975**

***e-mail:* arbdd@ddbra.ro**





Thank you